Summary

- In November 2019 NASA & ESA agreed to undertake the Arctic Methane and Permafrost Challenge (AMPAC)
- AMPAC was designed to foster inter-agency and international collaboration
- The AMPAC team rolled out the initiative to the International community at the 2020 European Polar Science Week
- Joint field campaigns are planned: MAGIC 2021 and ABoVE 2022
- ESA has announced 4 AMPAC-related funding opportunities

AMPAC WG Synthesis Activities

- The three working groups continue making progress towards synthesis studies and corresponding activities
- The Methane Arctic Permafrost Challenge Scaling the approach, E Malina et al., Nature Geosciences (in prep)
- Emergent biogeochemical risks and impacts of Arctic permafrost degradation, KR Miner et al, Nature Climate Change (in revision)

Additional Information on the Arctic Methane and Permafrost Challenge (AMPAC) NASA-ESA collaborative community initiative may be found at
https://cce.nasa.gov/methane_challenge.html
https://eo4society.esa.int-communities/scientists/arctic-methane-and-permafrost/
AGU Town Hall: Dec 2019

ESA AND NASA JOIN FORCES TO ADDRESS
THE ARCTIC METHANE CHALLENGE
NASA and ESA are planning a joint community initiative to investigate the linkages between permafrost degradation and Arctic methane emissions. Through this initiative ESA and NASA aim to foster scientific collaboration across the Atlantic to promote a community response to one of the main scientific challenges of the next decade:

To estimate and understand the magnitude and dynamic evolution of Arctic methane emissions
The AMPAC Initiative is Articulated Across 3 Working Groups

**WG1: Enhanced Retrievals, Observations, & Data Sets.** Enhances satellite retrievals over land and atmosphere, enhanced collection of data and in situ observations, validation, intercomparisons, building a consistent pan-Arctic data set

**WG2: Reconciling observation strategies & modelling approaches.** Advance the effective integration and reconciliation of data and modelling approaches, reconcile top-down and bottom up approaches, promote synthesis analyses, integrate process studies from local to pan-Arctic scales

**WG3: Future observations & next generation missions.** Prepare for future missions, future observations, future field and airborne campaigns, exploit advanced technologies

Additional Information on the Arctic Methane and Permafrost Challenge (AMPAC) NASA-ESA collaborative community initiative may be found at [https://cce.nasa.gov/methane_challenge.html](https://cce.nasa.gov/methane_challenge.html) [https://eo4society.esa.int/communities/scientists/arctic-methane-and-permafrost/](https://eo4society.esa.int/communities/scientists/arctic-methane-and-permafrost/)
AMPAC/MAGIC 2021
Arctic Methane Campaign in Scandinavia
C Crevoisier (CNRS-LMD), C Bes (CNES)

Additional Information on the Arctic Methane and Permafrost Challenge (AMPAC) NASA-ESA collaborative community initiative may be found at
https://cce.nasa.gov/methane_challenge.html
https://eo4society.esa.int/communities/scientists/arctic-methane-and-permafrost/
Opportunities for AMPAC
Scientific Collaboration: 2021

ESA is planning to open the following opportunities in support of AMPAC:
Please, visit ESA STAR System for more information
https://doing-business.sso.esa.int/

1. Call for AMPAC networking and collaborative research action (Intended 1-10461 - ESA POLAR SCIENCE CLUSTER - COLLABORATIVE RESEARCH AND NETWORKING ACTIONS)

2. Call to enhance satellites base methane retrievals in the Arctic (Intended ITT 1-10877 - ATMOSPHERE SCIENCE CLUSTER - RESEARCH OPPORTUNITIES 2)

3. Call for proposals – AMPAC Visiting Scientists Opportunities;

4. ESA-NASA collaborative campaign;

Additional Information on the Arctic Methane and Permafrost Challenge (AMPAC) NASA-ESA collaborative community initiative may be found at
https://cce.nasa.gov/methane_challenge.html
https://eo4society.esa.int/communities/scientists/arctic-methane-and-permafrost/